

REMARKS

Below, the applicant's comments are preceded by related remarks of the examiner set forth in small bold font.

2. Claims 1-5, 7, 9, 10, 11, 13 are rejected under 35 USC 103(a) as being unpatentable over Isfeld et al. US Patent No. 5592622 (hereinafter Isfeld) in view of Chilton et al. US Patent No. 6418488 (hereinafter Chilton).
3. Referencing claim 1, Isfeld teaches a processor, comprising:
4. one or more processing engines to schedule transfers of data packets between the processor and the devices (e.g., col. 8, line 50 – col. 9, line 15);
5. a push engine to perform unsolicited transfers of the status data to the processing engines in response to the module collecting new status data (e.g., col. 23, line 45 – col. 24, line 15) Isfeld does not specifically teach a module configured to collect status data from devices connected to a bus, the status data indicating readiness of the devices to participate in data transfers over the bus. Chilton teaches a module configured to collect status data from devices connected to a bus, the status data indicating readiness of the devices to participate in data transfers over the bus (e.g., col. 25, lines 18-59). It would have been obvious to one skilled in the art at the time the invention was made to combine Chilton with Isfeld because if one device does not receive a type of status data (i.e., acknowledgement signal), transfer errors could accumulate in the system.

Isfeld does not disclose or suggest “a push engine to perform unsolicited transfers of the status data to the processing engines in response to the module collecting new status data,” where status data indicates “readiness of devices to participate in data transfers,” and the processing engines “schedule transfers of data packets.” As the examiner stated, Isfeld does not specifically teach a module configured to collect status data from devices connected to a bus. Since Isfeld does not teach a module to collect status data, Isfeld could not have taught or suggested performing any sort of “transfers of the status data,” let alone status data transfers that are “unsolicited” or that are made to “processing engines” or that are made “in response to the module collecting new status data.” Rather, Isfeld merely discloses buffers that receive unsolicited data and flush the data to a bus or to an SDRAM (column 23, lines 51-65).

The feature of claim 1 lacking in Isfeld is also not found in Chilton. In Chilton, when a “next frame ready bit” is found to be set, a “new frame transmission will begin immediately after the current frame is completed” (col. 25, lines 37-38). Chilton does not explain what, if anything, happens to the frame ready bit after it is detected, and therefore does not disclose or

suggest performing "unsolicited transfers of status data" to anywhere, let alone to the processing engines that "schedule transfers of data packets."

While Isfeld discloses sending and receiving unsolicited data, and Chilton discloses detecting a "next frame ready bit," the combination of Isfeld and Chilton still does not disclose or suggest, and would not have made obvious, "unsolicited transfers of the status data to the processing engines in response to the module collecting new status data."

Claims 2-5 and 7 are patentable for at least the same reasons as claim 1.

Claims 9-11 and 13 are patentable for reasons similar to claim 1.

13. Claim 6 is rejected under 35 USC 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488), in further view of Williams et al. US Patent No. 6144669 (hereinafter Williams).

15. Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Shiraki et al US Patent No. 5892979 (hereinafter Shiraki).

17. Claim 12 is rejected under 35 USC 103(a) as being unpatentable over Isfeld (559262) in view of Chilton (6418488) in further view of Vaidya US Patent No. 6279113 (hereinafter Vaidya).

19. Claims 14, 16, 17 are rejected under 35 USC 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski et al. US Patent No. 6430626 (hereinafter Witkowski).

27. Claim 15 is rejected under 35 USC 103(a) as being unpatentable over Isfeld (592622) in view of Chilton (6418488) in further view of Vaidya (6279113) in further view of Witkowski (6430626).

Claims 6, 8, 12, 14-17 are patentable for at least the same reasons as claim 1.

33. Claims 18, 19 and 26 are rejected under 35 USC 103(a) as being unpatentable over Ebrahim (5887134) in view of Gullledge (5644623) in further view of Chilton (6418488).

Referencing claim 18, Ebrahim teaches a router, comprising:

a bus (e.g., col. 1, lines 36-48); and

a parallel processor coupled to the bus and comprising (e.g., col. 1, lines 36-48):

a plurality of processing engines to process data transfers with a plurality of devices connected to the bus (e.g., col. 15, lines 19-37). Ebrahim does not specifically teach an interface connected to collect ready status data from the devices and to automatically transfer ready status data the processing engines in response to the status data being collected. Gullledge teaches an interface connected to collect status data from the devices and to automatically transfer status data the processing engines in response to the status data being collected (e.g., col. 14, lines 44-63). It would have been obvious to one skilled in the art at the time the invention was made to combine Gullledge with Ebrahim because it would be faster if the status was automatically transfer once the status data was collected.

This could aid in the shortening of latency. Gulledge does not specifically teach the ready status data as described above. Chilton teaches ready status data (e.g., col. 25, lines 18-59). It would have been obvious to one skilled in the art at the time the invention was made to combine Chilton with the combine system of Ebrahim and Gulledge because of similar reasons as stated above.

The applicant disagrees because it would not have been obvious to combine Gulledge with Chilton. The data that is transferred in Gulledge is only related to assessment of quality of service, and is not status data that indicates "readiness of the devices to participate in data transfers." In Gulledge, "[d]ata are collected by the MQM 1 and the FQM 3 *specific to the progress and audio quality* obtained by each cellular radio telephone call placed, [and] ... the data collected by the MQM 1 and the FQM 3 are transferred to the OQA (Office Quality Analysis) 4." (col. 5, lines 8-15, emphasis added) There is no suggestion that "status data indicating readiness of devices to participate in data transfers" would assist in assessment of quality of service of cellular radiotelephone systems.

Also, Gulledge does not disclose or suggest "automatically transfer[ing] ready status data to the processing engines in response to the status data being collected," where the processing engines "process data transfers with a plurality of devices connected to the bus." In Gulledge, the OQA is not such a processing engine; rather, the OQA uses the data "to produce statistical tables and graphs 4A that represent the quality of the cellular service provided during the test." (col. 5, lines 15-19) A combination of Gulledge and Chilton would not have disclosed or suggested, and would not have made obvious, "automatically transfer[ing] ready status data to the processing engines in response to the status data being collected."

Thus, the combination of Ebrahim, Gulledge, and Chilton still would not have disclosed or suggested, and would not have made obvious, "an interface connected to collect ready status data from the devices and to automatically transfer ready status data to the processing engines in response to the status data being collected, the status data indicating readiness of the devices to participate in data transfers."

38. As per claim 19, Gulledge does not specifically teach wherein the ready status data indicates the readiness of individual ones of the devices to one of receive a data packet from and transmit a data packet to the parallel processor. Witkowski teaches wherein the status data indicates the readiness of individual ones of the devices to one of receive a data packet from and transmit a data packet to the parallel processor (e.g., col. 5, line 59 – col. 6, line 39), and Chilton teaches the ready status data (e.g., col. 25, lines 19-59). It would have been

obvious to one skilled in the art at the time the invention was made to combine Ebrahim with Gulledge and Chilton because it could lead to errors if the devices are not ready to transmit or receive data. This could prevent bottlenecking and packet collision.

39. As per claim 26, Ebrahim teaches wherein the devices are capable of transmitting data packets between the bus and external networks (e.g., col. 3, lines 7-28).

40. Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Chilton (6418488) in further view of Vaidya (6279113).

42. Claims 21 and 27 are rejected under 35 USC 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Chilton (6418488) in further view of Isfeld (5592622).

45. Claim 22 is rejected under 35 USC 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Chilton (6418488) in further view of Witkowski (6430626).

47. Claim 23 is rejected under 35 U. S. C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Chilton (6418488) in further view of Cotton et al. (5623489) (hereinafter Cotton).

49. Claims 24 and 25 are rejected under 35 U. S. C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Chilton (6418488) in further view of Vaidya (6279113) in further view of Cotton (6430626).

Claims 19-27 are patentable for at least the same reasons as claim 18.

54. Claims 28 -30 are rejected under 35 U. S. C. 103(a) as being unpatentable over O'Loughlin et al. (6275505) (hereinafter O'Loughlin) in view of Witkowski (6430626) further in view of Chilton (6418488) in further view of Isfeld (5592622)..

As per claim 28, O'Loughlin teaches an article comprising a computer-readable medium which stores executable instructions for transferring data packets over a bus, the instructions causing a processor to (e.g., col. 10, lines 20-33):

But, O'Loughlin does not specifically teach collect information on readiness of devices connected to the bus to one of transmit and receive data packets; and transfer a portion of the collected information to a processing engine configured to schedule data transfers, the transferring being unsolicited by the processing engine. Chilton teaches information on readiness of devices (e.g., col. 25, lines 18 -59) and Witkowski teaches the devices connected to the bus to one of transmit and receive data packets (e.g., cols. 23-24). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with Chilton and O'Loughlin because it would be more efficient to transmit and receive data when the devices is ready. If the device is not ready it could receive or transmit incorrect data leading to errors. Isfeld teaches transfer a portion of the collected information to a processing engine configured to schedule data transfers, the transferring being unsolicited by the processing engine (e.g., col. 23, line 45 - col. 24, line 15). It would have been obvious to one skilled in the art at the time the invention was made to combine Isfeld with the combine system of O'Loughlin, Chilton and Witkowski because it would be more efficient if data that was more important was to be transferred first. Furthermore, it would be faster if the data that was transmitted were unsolicited because the data would not use up time in unnecessary processing.

As discussed above, Isfeld does not disclose or suggest transferring “a portion of the collected information to a processing engine configured to schedule data transfers, the transferring being unsolicited by the processing engine,” as recited in claim 28, where the collected information is on “readiness of devices connected to the bus to one of transmit and receive data packets.” This feature is also not disclosed or suggested, and would not have been made obvious, by other references cited by the examiner.

Claims 29 and 30 are patentable for at least the same reasons as claim 28.

The fact that the applicant has stated arguments in response to positions of the examiner does not mean that the applicant concedes any other positions of the examiner. The fact that the applicant has stated certain arguments for the patentability of certain claims does not mean that there are not other good reasons for the patentability of those claims or other claims.